

REMARKS

Claims 1-52 are pending. Claims 1, 3-12, 14, 15, 17, 19-26, 28-37, 39-40, 42, and 44-52 have been amended. Additionally, portions of the specification have been amended to improve readability. Applicants respectfully request reconsideration of the application in response to the non-final Office Action.

Claim Rejection – 35 U.S.C. §101

Claims 51 and 52 have been rejected under 35 U.S.C. §101 for allegedly being directed to non-statutory subject matter. Claims 51 and 52 have been amended in accordance with the Examiner's suggestion. (See, Office action at page 3). Accordingly, Applicants respectfully request that the rejection of claims 51 and 52 under 35 U.S.C. §101 be withdrawn.

Claim Rejection – 35 U.S.C. §102

Claims 21-25, 46-50 and 52 have been rejected under 35 U.S.C. §102(b) for allegedly being anticipated by U.S. Patent No. 6,263,023 to Ngai ("Ngai"). Applicants respectfully traverse the rejection for at least the following reasons.

Independent claim 21, as amended, recites an apparatus for redundant image decoding that includes, among other features, "a picture header decoding unit which decodes picture header information containing structures, positions, and sizes of slices in a bitstream where image data are encoded," and "a slice construction unit which determines the structures and positions of a plurality of slices to be decoded according to the picture header information," "wherein redundantly-encoded

predetermined regions of at least two slices of the plurality of slices constructed by the slice construction unit are overlapped on each other."

The specification of the instant application describes that, in one embodiment for redundant image encoding and decoding, regions indicated by slices are overlapped on each other when an image is encoded in units of slices, and the overlapped portion is redundantly encoded such that robustness with errors can be achieved during transmission via a network. (Specification at page 18, lines 19- 23). For example, regions of an image that can be redundantly encoded might include a portion the image that a user subjectively regards as important (e.g., a region of interest (ROI)), a potion of an image where motions are actively performed, or a portion of an image where errors are likely to occur or where it is difficult to conceal errors. (Specification at page 8, lines 16-20).

Ngai describes decoding television data at a high rate by using a plurality of slower slice decoders. (Ngai at Abstract). The decoding method described in Ngai includes "receiving video data encoded into data slices, storing a plurality of the data slices with each having a slice address, allocating the stored data slices to a plurality of slice decoders by sending the slice addresses to the slice decoders in response to the video data and to busy signals generated by the slice decoders, and decoding the stored slices with the plurality of slice decoders." (Ngai at col. 3, lines 36-44). Ngai also describes that after decoding a slice, decoded slice data is accumulated in a frame buffer until data for a complete frame is accumulated, after which time a synchronizer (20) controls the assembly of the decoded slices into a decoded frame. (Ngai at col. 4, lines 45-51).

Nowhere does Ngai describe redundant image decoding, where redundantly-encoded predetermined regions of at least two slices of the plurality of slices constructed by the slice construction unit are overlapped on each other, as recited in claim 21. Applicants respectfully disagree that the synchronizer (20) described in Ngai "leads to the overlapped slices that include the predetermined regions of at least two slices of the plurality of slices constructed by the slice construction unit," as suggested by the Office. (See, Office action at page 4). Rather, the synchronizer (20) merely assembles decoded slices of a frame that have been accumulated in a buffer. Thus, while Ngai describes decoding slices using a plurality of slice decoders, nowhere does Ngai describe decoding slices that have redundantly encoded predetermined regions overlapped on each other. For at least these reasons, Applicants submit that Ngai does not anticipate independent claim 21.

Accordingly, Applicants respectfully request that rejection under 35 U.S.C. §102(b) of claim 21, and of claims 22-25, which depend therefrom, be withdrawn. Additionally, for reasons analogous to those presented for claim 21, Applicants submit that Ngai does not anticipate independent claim 46, as amended, and respectfully request that rejection under 35 U.S.C. §102(b) of claim 46, and of claims 47-50 and 52, which depend therefrom, be withdrawn.

Claim Rejection – 35 U.S.C. §103(a)

Claims 1-20, 26-45 and 51 have been rejected under 35 U.S.C. §103(a) for allegedly being unpatentable over U.S. Patent No. 5,949,490 to Borgwardt et al. ("Borgwardt") in view of Ngai. Applicants respectfully traverse the rejection for at least the following reasons.

Applicants submit that the Office did not establish a *prima facie* case of obviousness with respect to the cited combination of references. To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. (MPEP §2143.03, citing *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974)). Applicants disagree with the Office that Borgwardt teaches or suggests "a slice modeling unit which determines structures of slices to be used in encoding an image and predetermined regions to be redundantly encoded so that image data of each predetermined region of the image to be redundantly encoded is contained in a plurality of slices," as recited in independent claim 1 (emphasis added). (See, Office action at page 5).

Borgwardt describes distributing video buffer rate control over a parallel compression architecture using a three pass algorithm for each picture within a group of pictures (GOP) that divides a picture into slices, each with its own target rate, and processes sets of slices in parallel using "microrate" controllers for each slice. (Borgwardt at col. 3, lines 1-4 and col. 4, lines 55-57). The microrate controller encodes each macroblock in a current slice based upon target rates and quantizer scale factors passed to it by a master rate controller and actual target rates and quantizer scale factors for preceding macroblocks in the slice. (Borgwardt at

col. 4, lines 19-23). Borgwardt merely describes that "[e]ach slice may correspond to one horizontal section of the picture." (Borgwardt at col. 4, lines 16-17). Nowhere does Borgwardt teach or suggest redundant image encoding and, in particular, "each predetermined region of the image to be redundantly encoded is contained in a plurality of slices," as recited in claim 1.

Further, Applicants submit that Ngai does not supply, and is not purported to supply, the teachings missing from Borgwardt. As described herein, Ngai describes decoding slices using a plurality of slice decoders. Nowhere does Ngai teach or suggest redundant image encoding and, in particular, Ngai does not teach or suggest "each predetermined region of the image to be redundantly encoded is contained in a plurality of slices," as recited in claim 1. For at least these reasons, Applicants submit that independent claim 1 is patentable over Borgwardt in view of Ngai.

Accordingly, Applicants respectfully request that rejection under 35 U.S.C. §103(a) of claim 1, and of claims 2-20, which depend therefrom, be withdrawn. Additionally, for reasons analogous to those presented for claim 1, Applicants submit that independent claim 26 is also patentable over Borgwardt in view of Ngai, and respectfully request that rejection under 35 U.S.C. §103(a) of claim 26, and of claims 27-45 and 51, which depend therefrom, be withdrawn.

Conclusion

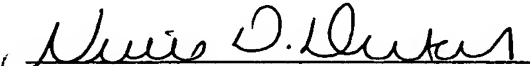
It is believed that this Response and Amendment does not require additional fees. However, if additional fees are required for any reason, please charge Deposit Account No. 02-4800 the necessary amount.

In the event that there are any questions concerning this paper, or the application in general, the Examiner is respectfully urged to telephone Applicants' undersigned representative so that prosecution of the application may be expedited.

Respectfully submitted,

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